## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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SERIAL NO.: 10/535,713 ART UNIT: 3643

FILED: February 2, 2006 EXAMINER: Hayes, K.C.

TITLE: METHOD AND APPARATUS FOR DETECTING MASTITIS

## Amendment D: CLAIM AMENDMENTS

Claims 1 - 20 (canceled by earlier amendments).

Claims 21 - 29 (canceled herein).

30. (new) A method of testing milk from a mammal for a presence of an infection in the mammal, the method comprising:

forming a reaction chamber having an interior volume;

increasing said interior volume of said reaction chamber so as to draw a liquid sample of the milk from a milk line of an automated milking system into said interior volume of said reaction chamber:

drawing a reagent into said interior volume of said reaction chamber, said reagent having a light-amplifying compound therein;

reacting said light-amplified compound with a substance produced by cells of the mammal in response to the infection prior to the liquid sample being introduced into said reaction chamber;

activating a light detector to a measure a peak of emitted light from a reaction between the light-amplifying compound and he substance produced by the cells, the step of activating the light detector being immediately after the steps of drawing the liquid sample of the

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mild and drawing the reagent.

- 31. (new) The method of Claim 30, the substance produced by the cells of the mammal in response to the infection being produced by phagocytic leukocytes.
- 32. (new) The method of Claim 31, the substance produced by the cells of the mammal in response to the infection being produced when phagocytic leukocytes phagocytose bacteria.
- 33. (new) The method of Claim 30, said light-amplifying compound reacting with reactive oxygen so as to emit light.
  - 34. (new) The method of Claim 30, the step of activating comprising:
    measuring an intensity of emitted light for a maximum of five minutes.
- 35. (new) The method of Claim 30, said reaction chamber being a tubular member having a piston positioned in sealed relation with an inner wall of said tubular member, said tubular member being fluid-tight and light-tight, the step of increasing said interior volume comprising:

moving said piston upwardly in said tubular member.

- 36. (new) The method of Claim 32, said tubular member having a first inlet port and a second inlet port, the method further comprisine:
  - connecting the first inlet port to the milk line of the automated milking system; and connecting the second inlet port to a supply of said reagent.
  - $37. \ (\text{new})$  The method of Claim 36, further comprising:
- connecting electrically-actuated operating valves respectively to said first and second inlet ports; and
- controlling said operating valves to regulate a proportion of said reagent and the milk drawn into said reaction chamber.